REMARKS/ARGUMENTS

Claims 1-34 are pending in the application. Claims 6-10 and 16-27 are withdrawn from consideration. In the Office Action mailed April 27, 2005, claims 1-5, 11-15, and 28-34 were rejected. For the reasons set forth below, Applicants respectfully request reconsideration and allowance of all the pending claims.

Section 102 Rejections

Claims 1-5 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Hsu, U.S. Pre-Grant Publication 2003/0222250 ("*Hsu*").

With respect to independent claim 1, the Applicant submits that *Hsu* does not disclose the following elements recited in claim 1: (i) "ratio of said PEDOT to said PSS is one part by weight of said PEDOT to at most ten parts by weight of said PSS", and (ii) "plurality of substantially electrically isolated conducting polymer regions".

More specifically, *Hsu* does not disclose that the "ratio of said PEDOT to said PSS is one part by weight of said PEDOT to at most ten parts by weight of said PSS". On page 3 of the Office Action, the Examiner admitted that *Hsu* "does not specifically disclose that the ratio of PEDOT to PSS is one to at most ten." The Examiner asserted that the PEDOT to PSS ratio is a result effective variable whose optimization only involves routine skill in the art. Assuming for the sake of argument that the Examiner's assertion about the PEDOT to PSS ratio is correct, the Applicants assert that the *prima facie* case of obviousness is rebutted because *Hsu* teaches away from the claimed PEDOT/PSS ratio of one to at most ten. *See, e.g., In re Geisler*, 116 F.3d 1465, 1471 (Fed. Cir. 1997)(a *prima facie* case of obviousness may be rebutted by showing that the art, in any material respect, teaches away from the claimed invention). *Hsu*, at ¶[0022], states that "[i]n order to prevent cross-talk between lines or pixels of the patterned anode, electrical conductivity of the buffer layers should be as low as possible without jeopardizing the light emission properties of the device" (underline added). The PEDOT to PSS ratio of one to at most ten provides higher conductivity than the PEDOT to PSS ratios disclosed in *Hsu*. For example, all of the examples in *Hsu* that use PEDOT/PSS as

the buffer layer (i.e., examples 9-11, and 17-20) use Baytron®-P (VP AI4083) and this solution has a PEDOT to PSS ratio of one to sixteen. *Hsu* does not disclose using a lower PEDOT/PSS ratio and in fact teaches away from using a lower ratio because as this ratio decreases, the conductivity of the PEDOT/PSS buffer layer increases; as noted earlier, *Hsu* teaches that the conductivity of the buffer layer "should be as low as possible". Similarly, the other reference referred to in the Office Action (i.e., Hsu, U.S. Pre-Grant Publication 2004/0206942 ("*Hsu '942*")) discloses at ¶ [0006] that Baytron®-P (VP AI4083) has conductivity of approximately 10^{-3} S/cm and that this conductivity is too high to avoid cross-talk between pixels. Also, *Hsu '942*, at ¶ [0006], states that the conductivity of 10^{-3} S/cm is about three order of magnitude higher than necessary. Further, that paragraph states that "in order to prevent cross-talk between anode lines (or pixels), the electrical conductivity of the buffer layers should be minimized to about 10^{-6} S/cm without negatively affecting the light emitting properties of a device containing such a buffer layer." In order to obtain conductivity of 10^{-6} S/cm, the PEDOT to PSS ratio would have to be greater than one to sixteen. Thus, for the reasons provided above, even if the Examiner has shown a *prima facie* case of obviousness, the Applicants have rebutted this presumption because *Hsu* and *Hsu '942* teach away from the claimed PEDOT/PSS ratio of one to at most ten.

In addition, *Hsu* does not disclose that the conducting polymer regions are "substantially electrically isolated" as recited in claim 1. *Hsu* at ¶ [0021] discloses that the conductive polymer layer can be patterned. However, *Hsu* does not mention that the patterned conductive polymer layers are electrically isolated from each other. A patterned layer does not necessarily mean that the conductive polymer regions are electrically isolated from each other. For example, the conductive polymer layer can be patterned as lines along the patterned anode lines; in this case, the conducting polymer regions along one of the anode lines is continuous and not electrically isolated from each other. In contrast, in FIG. 2 of Applicant's patent application, the conducting polymer regions (e.g., element 215 in FIG. 2) along one of the anode lines (e.g., element 212 in FIG. 2) is discontinuous and electrically isolated from the other regions. *Hsu* discloses that the conductive polymer layer can be patterned, however, this general statement

should not be interpreted to mean that *Hsu* discloses that the conductive polymer layer is patterned into "substantially electrically isolated conducting polymer regions."

For the foregoing reasons, the Applicants respectfully request that claim 1 be allowed. Claims 2-5 depend from claim 1. Accordingly, they are patentable over *Hsu* for at least the reasons set forth above with respect to claim 1.

Claims 11-15 are rejected under 35 U.S.C. § 103(a) as being unpatentable over *Hsu* in view of Hsu, U.S. Pre-Grant Publication 2004/0206942 ("*Hsu '942*").

With respect to independent claim 11, the Applicant submits that *Hsu* and *Hsu '942* either separately or in combination does not disclose the following elements recited in amended claim 11: (i) "each of said plurality of substantially electrically isolated conducting polymer regions has a conductivity that ranges from about 1.5×10^{-3} S/cm to about 10 S/cm", and (ii) "plurality of substantially electrically isolated conducting polymer regions".

More specifically, *Hsu* and *Hsu '942* either separately or in combination does not disclose that "each of said plurality of substantially electrically isolated conducting polymer regions has a conductivity that ranges from about 1.5×10^{-3} S/cm to about 10 S/cm". On page 5 of the Office Action, the Examiner stated that the "Hsu ('250) reference does not specifically disclose the conductivity of the aqueous dispersion of the buffer layer." *Hsu '942* at ¶ [0006] discloses the following:

> The highest conductivity of buffer layer films derived from commonly known aqueous polyaniline or polythiophene dispersion is generally in the range of about 10^{-3} S/cm. The conductivity is about three order magnitude higher than necessary. Indeed, in order to prevent cross-talk between anode lines (or pixels), the electrical conductivity of the buffer layers should be minimized to about 10^{-6} S/cm without negatively affecting the light emitting properties of a device containing such a buffer layer. For example, a film made from a commercially available aqueous poly(ethylenedioxythiophene)("PEDT") dispersion, Baytron®-P VP Al 4083 from H.C. Starck, GmbH, Leverkusen, Germany, has conductivity of $\sim 10^{-3}$ S/cm. This is too high to avoid cross-talk between pixels.

As shown by the above passage from ¶ [0006] of *Hsu '942*, a buffer layer with a conductivity of 10^{-3} S/cm is undesirable; preferably, the conductivity of this layer is much lower so as to avoid cross-talk. As the above passage shows, *Hsu* and *Hsu '942* either singly or together do not disclose conducting polymer regions that have a conductivity greater than 1.5×10^{-3} S/cm (i.e., amended claim 11 specifically recites that the "substantially electrically isolated conducting polymer regions has a conductivity that ranges from about 1.5×10^{-3} S/cm to about 10 S/cm").

In addition, *Hsu* and *Hsu '942* either singly or together do not disclose that the conducting polymer regions are "substantially electrically isolated" as recited in amended claim 11. *Hsu* does not disclose that the conducting polymer regions are "substantially electrically isolated" for the reasons set forth above with respect to independent claim 1. *Hsu '942* does not even disclose that the "buffer layer 120" is patterned, and certainly does not disclose that the "buffer layer 120" is patterned into "substantially electrically isolated conducting polymer regions."

For the foregoing reasons, the Applicants respectfully request that amended claim 11 be allowed. Claims 12-15 depend from claim 11. Accordingly, they are patentable over the cited prior art references for at least the reasons set forth above with respect to claim 11.

With respect to independent claim 28, the Applicants assert that this claim is allowable for the reasons specified earlier with respect to claims 1 and 11. More specifically, as explained earlier, claim 28 is allowable because the cited prior art references do not disclose the following elements recited in claim 28: (i) "ratio of said PEDOT to said PSS is one part by weight of said PEDOT to at most ten parts by weight of said PSS", (ii) "plurality of substantially electrically isolated conducting polymer regions", and (iii) "each of said plurality of substantially electrically isolated conducting polymer regions has a conductivity that ranges from about 1.5×10^{-3} S/cm to about 10 S/cm". Accordingly, the Applicants respectfully request that claim 28 be allowed. Claims 29-34 depend from claim 28. Accordingly, they are patentable over the cited prior art references for at least the reasons set forth above with respect to claim 28.

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CONCLUSION

Applicants have made an earnest attempt to place this case in condition for allowance. For the foregoing reasons, and for other reasons clearly apparent, Applicants respectfully request allowance of all pending claims.

If the Examiner feels that a telephone conference or an interview would advance prosecution of this Application in any manner, the undersigned attorney for Applicants stands ready to conduct such a conference at the convenience of the Examiner.

The Commissioner is hereby authorized to charge any additional fees or credit any overpayments to Deposit Account No. 19-2179 of Siemens Corp.

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